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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/606,137

06/25/2003

David Vincent Zyzak

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THE PROCTER & GAMBLE COMPANY
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EXAMINER

THAKUR, VIREN A

ART UNIT

PAPER NUMBER

1761

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/606,137	Applicant(s) ZYZAK ET AL.	
	Examiner Viren Thakur	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21, 42-44, 47, 48 and 50-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 51-63 is/are allowed.
- 6) ☒ Claim(s) 11-21, 42-44, 47 and 48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 30, 2006 has been entered.

Response to Amendment

2. As a result of the amendment to instant claims 11-32 and 45-50, the rejection under 35 U.S.C. 112, first paragraph, has been withdrawn; however a new grounds for rejection under 35 U.S.C. 112, first paragraph has been set forth below.
3. Claims 1-10 and 51-63, rejected under 35 U.S.C. 103(a) are free of the prior art.
4. Claims 11-21, 47, 48 and 50 remain rejected under 35 U.S.C. 112, second paragraph, for the reasons discussed below.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 11-21, 47, 48 and 50 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for using an enzyme to inhibit and reduce the levels of asparagine in a food product, does not reasonably provide enablement for any other means for reducing asparagine other than an asparagine reducing enzyme, such as asparaginase. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

A number of factors must be considered in assessing the enablement of an invention, including the following: the breadth of the claims, the amount of experimentation necessary, the guidance provided in the specification, working examples provided, predictability, and the state of the art. See *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Circ. 1988). The instant claims recite, "wherein the level of asparagine in said food material is reduced." The instant

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claims do not limit reducing asparagine only by an asparagine inhibiting enzyme but broadly read on any means for reducing asparagine. The disclosure of Application; however, only provides support for the use of an asparagine inhibiting enzyme and does not provide support for other means for reducing asparagine, such as extraction, fermentation, leaching and washing (non-limiting examples). Therefore to determine other means for reducing the level of asparagine in a food material would require undue experimentation for one skilled in the art, and do not have support in the Applicant's disclosure commensurate with the scope of the claims.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 11-21, 47, 48 and 50 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's arguments have been fully considered but are not persuasive for the reasons set forth below. The Examiner notes that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Therefore, although Applicant has provided support from the specification for the requisite degree of reduction of asparagine, the term "reduced" is still not defined

by the claim. As previously stated, if Applicant intends the claim to indicate some comparison between the current food material and a control of the same food material, then Applicant may wish to claim this language as part of the invention. Therefore, the claim language must provide a positive and definite frame of reference by which one having ordinary skill in the art would be able to ascertain the metes and bounds of the claimed invention. The current amendment to instant claim 11 does not provide this frame of reference, but rather merely states that the level of asparagine in said food material is "reduced." As previously stated, while the specification may be useful to clarify or support the claims, it is improper to rely upon the specification to provide the role of distinctly claiming the subject matter which the Applicant regards as their invention. The essential conditions must be provided within the context of a claim, in order to establish the necessary properties and in order to understand how the term "reduced" applies in this context, *in the claim*.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

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Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 11-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Liepa (US 3998975).

Liepa disclose wherein potato products, such as potato chips are fried (Column 2, Lines 24-30). Both asparagine and a reducing sugar are naturally occurring in starch based products, such as potatoes. Thus by frying the potato chip, Liepa inherently discloses reducing the asparagine in the food material. When heated the asparagine and reducing sugars that are naturally present would have reacted to form acrylamide. It is important to note that the instant claims do not specify how the food material reduces asparagine but merely that the food material should have reduced asparagine. Therefore by frying, the asparagine and reducing sugars present within starch based product would react (and thus be consumed) to form acrylamide. As a result, the asparagine would have been reduced, since it is one component of the reaction of asparagine with the reducing sugars to form acrylamide. Regarding the specific percentages of the reduction of asparagine, this would have been an inherent result of the

natural function of the frying process. For instance, during cooking, if the food product was completely burned it would have been inherent that the asparagine would have been significantly reduced within the food material.

In the alternative, Liepa disclose wherein potato products, such as potato chips are fried (Column 2, Lines 24-30); however are silent in explicitly teaching the levels by which asparagine is reduced. Nevertheless, asparagine and reducing sugars are commonly known to be present in starch based products, such as potatoes. By simply frying the potato, the level of asparagine would have been reduced since heating would convert the asparagine (in combination with reducing sugars) to acrylamide. Therefore, one having ordinary skill in the art would have recognized that by frying the potato the level of asparagine within the potato would have been reduced. The level by which the asparagine within the potato would be reduced would have been obvious based on the amount of heat (and cooking) to which the potato was exposed. Depending on the desired crispness the resultant heating time would have been shortened or extended. For instance, a crisper chip would require longer heating times than a less crisp potato chip. The longer heating time required for a crisper chip, would result in a longer reaction time between the asparagine and the reducing sugar. Because of the naturally occurring reaction between asparagine and the reducing sugars, the asparagine would have been intrinsically consumed as a result of the heating. Therefore, to reduce level of asparagine by any amount would not have provided a patentable feature over the prior art, since one having ordinary skill in

the art would have recognized that the amount of heating would determine the desired crispness of the chip and would intrinsically determine level by which the asparagine would have been reduced in the potato chip.

The Examiner further notes that although in the instant case the prior art does not address each and every level of asparagine within the food material, that this does not change the fact that the prior art discloses a food product with reduced asparagine, and to reduce the asparagine would have been a natural result of the reaction of asparagine with reducing sugars during the frying of the potato chip, regardless of whether the intent to reduce the asparagine had been recognized. The Examiner additionally notes that the instant claims are not limited in the means for producing the food material comprising reduced asparagine. Thus, by simply frying the food material the asparagine would have been reduced, for the reasons discussed above.

12. Claims 11-21 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilton et al. (US 4140801). Regarding instant claims 11-21, Hilton et al. disclose a food material, such as a potato chip (Column 5, Lines 46-50), that is fried (Column 6, Lines 28-54). Hilton et al. further teach blanching to reduce the browning enzymatically (Column 2, Lines 57-65).

Hilton et al. are silent in explicitly teaching wherein the asparagine in the food material is reduced. Nevertheless, as disclosed by Hilton et al., blanching reduces enzymatic browning. Additionally, it would have been obvious to one

having ordinary skill in the art that asparagine and reducing sugars naturally exist in potatoes. By frying said potato chip, the skilled artisan would have recognized that the formation of acrylamide would have naturally occurred as a result of the reaction between asparagine with the reducing sugars. An additional result of this reaction would have been the reduction/consumption of asparagine, since the two components required to react are reducing sugars and asparagine. Given these teachings, one having ordinary skill in the art would have recognized that by frying the potato chip, asparagine would have been naturally consumed and thus the amount of asparagine within the potato would have been reduced. Nevertheless, the level by which the asparagine within the potato would be reduced would have been obvious based on the amount of heat (and cooking) to which the potato was exposed as well as the time for heating. For example, longer heating times would have been required if a more crisp product was desired. Inherently, the longer heat time would consume more asparagine and thus further reduce asparagine (in reacting with the reducing sugars to form acrylamide).

Although the prior art does not address each and every level of asparagine within the food material, this does not change the fact that the prior art discloses a food product with reduced asparagine, and to reduce the asparagine would have been a natural result of the reaction of asparagine with reducing sugars during frying of the potato chip, regardless of whether this was intended. Depending on the length of time that the potato chip is fried would

have determined the length of the reaction and the percentage yield of acrylamide formed, as a result of the reaction of asparagine with the reducing sugars. Therefore, to reduce level of asparagine by any amount would not have provided a patentable feature over the prior art, since one having ordinary skill in the art would have recognized that the amount of heating would determine the level by which the asparagine would have been reduced in the potato chip.

Regarding instant claims 42-44, Hilton et al. disclose lowering the levels of the reducing sugars present in the potato chip by fermentation (Column 3, Lines 39-43).

However, Hilton et al. are silent in teaching a tortilla chip and reducing to specific levels of acrylamide.

By lowering the level of the reducing sugars, the yield of the reaction of asparagine with the reducing sugars to form acrylamide would have been reduced, since one of the reactants has been minimized. One having ordinary skill in the art would have recognized this as fundamental to limiting agents in reaction chemistry. Hilton et al. further disclose determining whether the fermentation has sufficiently lowered the levels of the reducing sugars within the potato (Column 3, Lines 64-68). This teaching suggests to one having ordinary skill in the art that the reducing sugars could be lowered to a desired degree depending on the type of color desired for the fried potato, after frying (Column 3, Lines 64-68). If a more brown or darker yellow color was desired more reducing sugars should be present. A lighter yellow color would occur as a result of less

reducing sugars present. As a natural result of the minimization of the amount of reducing sugars present the amount of acrylamide formed as a result thereof would have been lowered. Thus, to reduce the acrylamide to a specific percentage would have been obvious, given the teachings of Hilton et al., in combination with the knowledge of one having ordinary skill in the art: by minimizing the amount of reducing sugars, the possibility of browning the fried potato chip is minimized. Flowing naturally from this result, the formation of acrylamide would have also been minimized.

Regarding the tortilla chip, Hilton et al. are silent in teaching a tortilla chip but do disclose wherein the chip is made from a dough (Column 5, Lines 43-57) which is subsequently cut or sliced into a desired shape (Column 5, Line 50). One having ordinary skill in the art would have recognized that making a tortilla chip would have required the same process: first the corn would have been ground to make masa (dough) and subsequently would have been cut into the desired shapes. Nevertheless, corn also naturally contains asparagine and reducing sugars and thus, one having ordinary skill in the art would have expected similar results by fermenting corn to lower the levels of reducing sugars present.

13. Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroeder (US 4272554).

Schroeder et al. disclose "blister-inhibited potato chips", which are "inhibited against blister formation during frying". The chips are obtained by added a small amount of calcium, such as calcium chloride, to the potato slices prior to frying. After calcium addition and frying, "the resulting slices are ready for packaging." Schroeder et al. is silent in teaching tortilla chips. Schroeder et al. further teach wherein prior to frying, the potato, prior to slicing is blanched using chemical or steam treatment (Column 3, Lines 6-25).

Regarding the instant claims, by blanching prior to slicing and frying the potato slices, it would have been obvious to one having ordinary skill in the art that blanching is a means of extraction that would inherently remove components, such as reducing sugars from the potato. Therefore, when heat has been applied to the potato chip, the reduced sugars would naturally reduce the yield of acrylamide as a result of the reaction between the asparagine and the reducing sugars.

Regarding the specific amounts and percentage levels of acrylamide in the resultant products of the instant claims, this would have been an inherent result of the natural function of the added calcium and method disclosed. It is important to note that instant product/article claims are not limited in their means of production, and may be produced by any number of means, including the addition of cations such as calcium, the addition of asparaginase, or an extraction of asparagine from the food product, each effective in order to inhibit the formation of acrylamide from asparagine, absent any clear and convincing

evidence and/or arguments to the contrary. While the reference is silent with regard to the inherent resultant effect of the calcium addition upon acrylamide formation, apart from inhibited blistering after frying, it is noted that the reference need not appreciate every aspect or property of the disclosed invention. This does not detract from the teachings of the reference. Regarding the type of chip, the reduction of acrylamide as a result of frying would have been a natural result of the process as disclosed by Schroeder et al. regardless of the type of chip. Therefore to use a tortilla chip or a potato chip would not have provided a patentable feature over the prior art.

14. Claims 47, 48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilton et al. (US 4140801). Hilton et al. disclose as applied above. Hilton et al. further disclose wherein the potato chips are packaged and shipped (Column 6, Lines 50-54).

Hilton et al. is silent in teaching a container for containing the food product and a message associated with the container to inform the consumer that the food product contains a reduced level of asparagine.

However, in teaching packaging and shipping, Hilton et al. provide the evidence that packaging said chip in a container has been well known in the art. Furthermore, it has been well known in the art to provide labeling for advertising prominent new features or ingredients within a packaged food product. Thus, it would have been obvious to one having ordinary skill in the art that after the

frying and cooking of a food product that said food product would have been packaged and subsequently labeled to further promote a new feature or ingredient within the food. As recited in the instant claims, the message need only be associated with the container. Thus, it would have been obvious that during sale of the packaged chips, that there would have been a message for advertising either on the retail packaging or in the vicinity of the retail packages that would promote the new features or ingredients in the food. Therefore, to package and provide a label indicating this new feature would not have provided a patentable feature over the prior art.

15. Claims 47, 48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liepa (US 3998975). Liepa disclose as cited above.

Liepa is silent in teaching a container to inform the consumer that the food product and a message associated with the container to inform the consumer that the food product contains a reduced level of asparagine.

However, packaging and providing labeling for advertising prominent new features or ingredients within a packaged food product have been well known in the art. Thus, to one having ordinary skill in the art it would have been obvious that after the frying and cooking of a food product that said food product would have been packaged. Therefore, to package and provide a label indicating this new feature would not have provided a patentable feature over the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viren Thakur whose telephone number is (571)-272-6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

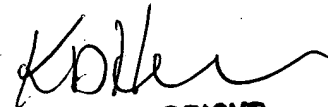
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Viren Thakur
Examiner
Art Unit: 1761



KEITH HENDRICKS
PRIMARY EXAMINER